

costs, including saving energy at home, educating children about biodiversity, protecting natural areas from development, and providing scientists with more research funds.

Edward O. Wilson from Harvard University, Pulitzer Prize-winning author of *The Diversity of Life*, told the forum, "I cannot imagine a scientific problem of greater immediate importance for humanity." Wilson has predicted the extinction of 1 in every 5 species in the next 30 years. Wilson noted that the loss of diversity affects all people by threatening ecological functions such as air and water cleansing, the balance of the food chain, erosion prevention, climate and flood control, as well as production of food and medicines.



Asahi Glass Foundation

**Working to conserve.** Martin Holdgate, director general, and other staff of IUCN (The World Conservation Union), pose with a statue of one aspect of biological diversity in danger of extinction.

## Blue Planet Prizes

Pioneering research into the global carbon dioxide cycle and oceanic carbon dioxide levels has earned Charles David Keeling the 1993 Blue Planet Prize Academic Award. The 1993 Blue Planet Prize Development and Implementation Award goes to the International Union for Conservation of Nature and Natural Resources for 40 years' work in preserving nature and biological diversity. The prizes, awarded by the Asahi Glass Foundation in Tokyo, are given annually to individuals and institutions working to solve environmental problems.

Keeling was one of the first researchers to realize the importance of scientifically measuring carbon dioxide levels. In 1958, he began measurements at the Mauna Loa Observatory in Hawaii using nondispersive infrared analysis. During the last 30 years, Keeling has accumulated a large body of valuable data on carbon dioxide levels. Currently a professor of oceanography at the Scripps Institution of Oceanography in San Diego, California, Keeling has generated data that are indispensable to discussions of global warming.

"It is especially gratifying that my life work on atmospheric carbon dioxide should be honored by an organization that reflects the pursuit of applied chemistry, my chosen field of study," said Keeling. "A general interest in geochemistry first led me to study atmospheric carbon dioxide. Only later did I incidentally find that the concentration of carbon dioxide was increasing over our whole earth . . . becoming a serious problem needing atten-

tion beyond the purely academic pursuit of scientific knowledge," he added.

The International Union for Conservation of Nature and Natural Resources, known more generally as IUCN—The World Conservation Union, was founded in 1948 and today is a union of over 770 members, including 62 governments, 100 governmental agencies, 600 nongovernmental organizations, and 5000 volunteer scientists and experts.

IUCN was recognized for the formation of global conservation strategies and for its role in forging international agreements such as the World Heritage Convention (natural sites), the Ramsar Convention (wetlands), and the Biodiversity Convention. IUCN publications such as the *Red Data Books*, which list species on the brink of extinction, and *The World Conservation Strategy*, are credited with influencing scientists and governments around the world. The selection committee also cited IUCN's leadership in forging and maintaining close working relationships with the United Nations, governments, and nongovernment organizations in its reasons for awarding this prize.

The Blue Planet Prizes are awarded in appreciation of environmental research and application efforts in recognition that environmental issues are primary among the world's concerns. Asahi Glass Foundation began selection of the prize winners almost one year before the prizes were awarded. Over 2000 nominators from 68 countries nominated 44 candidates for the Academic Award and 68 candidates for the Development and

Implementation Award. The prize includes a certificate of merit, a commemorative gift, and 50 million yen (approximately \$500,000).

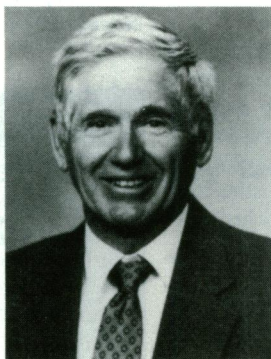
## Dioxin and Endometriosis

A recent report connects dioxin exposure with severe endometriosis in rhesus monkeys and has spurred new research on dioxin's potential link to the disease associated with chronic pain and infertility in perhaps 10% of reproductive-age women.

In monkeys, the presence and severity of endometriosis "directly correlated with dioxin exposure in a dose-dependent manner," says Sherry Rier, an immunologist at the University of South Florida in Tampa and vice president of research of the Endometriosis Association, a private Milwaukee-based education and research organization. Rier and her colleagues at South Florida, the University of Tennessee in Memphis, Chicago's Rush Medical College, and the Harlow Primate Laboratory at the University of Wisconsin in Madison reported their findings in the November issue of *Fundamental and Applied Toxicology*.

An earlier Canadian study described endometriosis in monkeys after exposure to polychlorobiphenyl compounds, and several studies have documented radiation-induced endometriosis in monkeys. The authors of the current animal study suggest that disruption of immune mechanisms may be one means by which each of these putative factors—polychlorinated biphenyls, radiation, and, now, dioxin—engender endometriosis.

The dioxin–endometriosis connection emerged "inadvertently" after a long-term toxicologic study of the effect of dioxin exposure on reproductive outcome in rhe-



Asahi Glass Foundation

**Charles David Keeling—**Increasing carbon dioxide needs more than academic attention.